

Listing of the claims

9. (currently amended) A three-side trimmer, comprising:

a receiving station for receiving booklets that are stacked into a bundle;

an alignment station for adjusting each receiving a booklet of the booklet bundle in a vertical direction composed of stacked booklets;

an alignment means arranged in the alignment station for aligning at least one of a top edge and a bottom edge of the booklets along with a fore edge of the booklets;

a conveying means for holding the booklet bundle in the vertical direction and conveying the booklet bundle from the receiving station to the alignment station;

a cutting station for cutting the top edge, the bottom edge and the fore edge of the booklet bundle;

~~a chuck mechanism for holding and conveying the booklet bundle from the alignment station to the cutting station;~~

a cutting table arranged in the cutting station for supporting the booklet bundle thereon;

a top edge cutting knife arranged in the cutting station for upwardly and downwardly movement so as to cut the top
~~cutting the bottom~~ edge of the booklet bundle;

a bottom edge cutting knife arranged in the cutting station, parallel to the top edge cutting knife for upwardly and downwardly movement so as to cut ~~, for cutting~~ the bottom edge of the booklet bundle;

a fore edge cutting knife arranged in the cutting station, perpendicular to the top edge cutting knife and the bottom edge cutting knife for upwardly and downwardly movement so as to cut the fore edge ~~, for cutting the fore edge~~ of the booklet bundle;

a pressing plate arranged in the cutting station for upwardly and downwardly movement between a first waiting position, which is positioned over the booklet bundle, held by the chuck mechanism and a first working position where the pressing plate presses the booklet bundle to the cutting table;

a first drive mechanism for upwardly and downwardly moving the pressing plate;

a chuck mechanism for holding the booklet bundle in the vertical direction, and conveying the booklet bundle from the alignment station to the cutting station, the chuck mechanism comprising:

a fixed block for supporting a bottom surface of the booklet bundle;

a movable block upwardly and downwardly movable relative to the fixed block; and

a second driving mechanism for driving the movable block to move between a waiting position, which is positioned over the booklet bundle, and a working position wherein the movable block pinches the booklet bundle in cooperation with the fixed block, characterized in that the three-side trimmer comprises a means for measuring a height of the booklet bundle when the booklet bundle is held by the conveying means; and

a means for control in a controlling type relationship with the first driving mechanism and the second driving mechanism the means for control adjusting the waiting position of the pressing plate or the waiting position of the movable block of the chuck mechanism or both correspondingly with the height of the booklet bundle according to a value measured by the means for measuring before the pressing plate and the movable block of the chuck mechanism initiate a next operation

~~a first measuring means for measuring a first height of the booklet bundle while the chuck mechanism holds the booklet bundle; and~~

~~control means for controlling the pressing plate moving between the first waiting position at the first height and the first working position.~~

10. (currently amended) The three-side trimmer of claim 9 wherein the number of the booklets to be cut is counted according to the value measured by the means for measuring along with a thickness of each booklet in the booklet bundle ~~where a drive mechanism controls movement of the pressing plate between the first waiting position and the first working position.~~

11. (withdrawn) The three-side trimmer of claim 9 further comprising:

a receiving station for receiving the booklet bundle;
a conveying means for holding and conveying the booklet bundle from the receiving station to the alignment station; and
a second measuring means for measuring a second height of the booklet bundle while the conveying means holds the booklet bundle.

12. (withdrawn) The three-side trimmer of claim 11 wherein the chuck mechanism comprises:

a fixed block for supporting a bottom surface of the booklet bundle;
a moving block movable with respect to the fixed block; and
a second driving means for moving the moving block between a second waiting position positioned over the booklet bundle and

a second working position where the moving block pinches the booklet bundle in cooperation with the fixed block.

13. (withdrawn) The three-side trimmer of claim 12 wherein the control means controls movement of the second driving means moving the moving block between the second waiting position and the second working position.

14. (withdrawn) The three-side trimmer of claim 9 further comprising:

a conveying means for conveying the booklet bundle from a receiving station to the alignment station;

an air evacuating means arranged in the receiving station for evacuating air from between the booklets, wherein the air evacuating means comprises a supporting plate for supporting the bottom surface of the booklet bundle;

a pressing plate movable with respect to the supporting plate to press the booklets to the supporting plate as the conveying means conveys them from the receiving station to the alignment station;

a second measuring means for measuring a second height of the booklet bundle while the pressing plate in the air evacuating means presses the booklet bundle to the supporting plate;

the chuck mechanism comprising a fixed block for supporting the bottom surface of the booklet bundle, a moving block movable with respect to the fixed block, and a second driving means for moving the moving block between a second waiting position positioned over the booklet bundle and a working position where

the moving block pinches the booklet bundle in cooperation with the fixed block; and

the control means for controlling the second driving means moving the moving block between the second waiting position and the working position.

15. (cancelled).

16. (withdrawn) A three-side trimmer comprising:

a receiving station for receiving a booklet bundle;

an alignment station for aligning the booklet bundle in the booklet bundle;

an alignment means arranged in the alignment station for aligning a top edge, a bottom edge, and a fore edge of the booklet bundle;

a conveying means for holding the booklet bundle and conveying the booklet bundle from the receiving station to the alignment station;

a cutting station for cutting a top edge, a bottom edge and a fore edge of the booklet bundle;

a chuck mechanism for holding the booklet bundle so that the booklet bundle is conveyable from the alignment station to the cutting station;

a cutting table arranged in the cutting station for supporting the booklet bundle thereon;

a top edge cutting knife arranged in the cutting station for cutting the top edge of the booklet bundle;

a bottom edge cutting knife arranged in the cutting station parallel to the top edge cutting knife for cutting the bottom edge of the booklet bundle;

a fore edge cutting knife arranged in the cutting station arranged perpendicular to the top edge cutting knife, and to the bottom edge cutting knife and for cutting the fore edge of the booklet bundle;

a pressing plate arranged in the cutting station movable between a waiting position, which is positioned over the booklet bundle, and a working position where the pressing plate presses the booklet bundle to the cutting table;

a driving mechanism for moving the pressing plate;

a means for measuring a height of the booklet bundle when the chuck mechanism holds the booklet bundle; and

means for control for controlling the driving mechanism in response to the height measured for measuring so that in the waiting position the pressing plate is moved to a height corresponding to the height of the booklet bundle, and in the working position the pressing plate presses the booklet bundle so that the booklet bundle is cleanly cuttable by the top edge, bottom edge and fore edge cutting blades.

17. (withdrawn) The three-side trimmer of claim 16 further comprising a ball screw for moving the chuck mechanism from the alignment station to the cutting station.

18. (withdrawn) A three-side trimmer comprising:

a receiving station for receiving a booklet bundle;

a means for evacuating air provided at the receiving station for evacuating air between the booklet bundle, the means for air evacuating comprising a supporting plate for supporting a bottom surface of the booklet bundle, and an air evacuation

pressing plate movable with respect to the supporting plate for pressing the booklets to the supporting plate;

an alignment station for aligning the booklet bundle;

a means for aligning arranged in the alignment station for aligning a top edge, a bottom edge, and a fore edge of the booklet bundle;

a means for conveying for holding the booklet bundle and conveying the booklet bundle from the receiving station to the alignment station;

a cutting station for cutting the top edge, the bottom edge and the fore edge of the booklet bundle;

a chuck mechanism for holding the booklet bundle and conveying the booklet bundle from the alignment station to the cutting station;

a cutting table arranged in the cutting station for supporting the booklet bundle;

a top edge cutting knife arranged in the cutting station for cutting the top edge of the booklet bundle;

a bottom edge cutting knife arranged in the cutting station parallel to the top edge cutting blade for cutting the bottom edge of the booklet bundle;

a fore edge cutting knife arranged in the cutting station perpendicular to the top edge cutting blade and the bottom edge cutting blade for cutting the fore edge of the booklet bundle;

a cutting station pressing plate arranged in the cutting station movable between a waiting position that is positioned over the booklet bundle, and a working position where the cutting station pressing plate presses the booklet bundle to the cutting table;

a driving mechanism for moving the cutting station pressing plate up and down;

a means for measuring the height of the booklet bundle when the air evacuation pressing plate in the presses the booklet bundle to the supporting plate; and

a means for control the controlling the driving mechanism in response to the height measured by the measuring means so that the moving block in the chuck mechanism is adjustable corresponding to the height of the booklet bundle.

19. (withdrawn) The three-side trimmer according to claim 18 wherein the check is adjustable to the height of the booklet bundle by the means for control, and the cutting station pressing plate is adjustable by the means for control in electronic communication with the cutting station.

20. (withdrawn) A trimmer comprising:

a receiving station comprising an air evacuation apparatus for driving air out of a book bundle;

a conveying apparatus for conveying the book bundle from the receiving station to an alignment station wherein the book bundle is aligned, the alignment station comprising a chuck mechanism for clamping the book bundle, the chuck mechanism comprising a fixed block and a movable block, the book bundle clamp able between the fixed block and the movable block; and

a cutting station for receiving the book bundle clamped between the fixed block and the movable block, the cutting block comprising blades for trimming the book bundle.

21. (withdrawn) The trimmer of claim 20 wherein the air evacuation apparatus further comprises a first cylinder for providing compressive force for driving air out of the book bundle, and the trimmer further comprises a conveying apparatus comprising a second air cylinder movable along a rail, the second air cylinder for holding the bundle of books as the second air cylinder moves along the rail.

22. (withdrawn) The trimmer of claim 21 wherein the conveying apparatus further comprises a ball screw which is in rotatable communication with the second air cylinder, the ball screw rotatable for causing the movement of the second air cylinder along the rail.

23. (withdrawn) The trimmer according to claim 20 further comprising a third cylinder connected to the second cylinder by a connecting member, and wherein the third cylinder is joined to a conveying claw, the conveying claw movable into and out of alignment with support plates that support the book bundle.

24. (withdrawn) The trimmer of claim 23 wherein the conveying claw is movable between a projected position and a retracted position by the third cylinder, in the projected position the conveying claw is for pushing a preceding booklet bundle towards the alignment station.

25. (withdrawn) The trimmer of claim 20 wherein the alignment station further comprises a top edge aligning guide, a bottom edge aligning guide, and lever guide, and wherein the book

bundle is alignable between the top edge aligning guide, bottom edge aligning guide, lever guide and the conveying claw.

26. (withdrawn) The trimmer of further of claim 20 further comprising a chuck mechanism for holding the book bundle and for conveying the book bundle from the aligning station to the cutting station.

27. (withdrawn) The trimmer of claim 26 wherein the chuck mechanism further comprises a fixed block for supporting a bottom surface of the book bundle, and the chuck mechanism further comprises a movable block movable between a waiting position and a working position, the working position for holding the book bundle between the fixed block and the movable block.

28. (withdrawn) The trimmer of claim 27 wherein the movable block is movable along a threaded shaft to hold and release the book bundle.

29. (withdrawn) The trimmer of claim 28 movable to and from the alignment station and the cutting station by way of a ball screw arrangement, and the cutting station comprises a plurality of knives.

30. (withdrawn) The trimmer of claim 27 wherein the plurality of knives comprises a top edge cutting knife for cutting the a top edge of the book bundle, a fore edge cutting knife for cutting the fore edge of the book bundle, and a bottom edge cutting knife for cutting a bottom edge of the book bundle.

31. (withdrawn) The trimmer of claim 30 wherein the cutting station further comprises a pressing plate and a driving mechanism for driving the pressing plate between a working position and non-working position, wherein at the working position the pressing plate presses the book bundle to a cutting table, the cutting table for supporting the book bundle.

32. (withdrawn) The trimmer of claim 21 wherein the book bundle is held between the pressing plate and the cutting table by the pressing plate, and the top edge cutting knife the fore edge cutting knife, and the bottom edge cutting knife are movable towards the book bundle held between the pressing plate and the cutting table to trim the book bundle.

33. (withdrawn) A trimmer comprising:

- a central processing unit for providing control and in electronic communication with:

- a receiving station comprising an air evacuation apparatus, the air evacuation unit for driving air out of a book bundle;

- a conveying apparatus;

- an alignment station for aligning the book bundle conveyed to it from the receiving station, the alignment station comprising a chuck mechanism for clamping the book bundle, the chuck mechanism comprising a fixed block and a movable block, the book bundle clampable between the fixed block and the movable block; and

- a cutting station for receiving the book bundle clamped between the fixed block and the movable block, the cutting block comprising blades for trimming the book bundle.

34. (withdrawn) The trimmer of claim 33 wherein the air evacuation apparatus comprises a first cylinder for driving air out of the book bundle, and the conveying apparatus comprises a second air cylinder controllably movable along a rail, the second air cylinder for holding the book bundle while the book bundle moved along the rail by way of a ball screw controllably rotated the central processing unit.

35. (withdrawn) The trimmer according to claim 34 further comprising a third cylinder connected to the second cylinder by a connecting member, and wherein the third cylinder is in communication with a conveying claw, the third cylinder is controlled by the central processing unit and for providing controllable movement of the conveying claw into and out of alignment with support plates that support the book bundle.

36. (withdrawn) The trimmer of claim 35 wherein the conveying claw is controllably movable between a projected position and a retracted position by the third cylinder, in the projected position the conveying claw is for pushing a preceding booklet bundle towards an alignment station.

37. (withdrawn) The trimmer of claim 33 wherein the alignment station further comprises a top edge aligning guide, a bottom edge aligning guide, a lever guide, and wherein the book bundle is alignable between the top edge aligning guide, bottom edge aligning guide, lever guide and the conveying claw.

38. (withdrawn) The trimmer of claim 33 further comprising a

chuck mechanism in electronic communication with the central processing unit, the chuck mechanism for holding the book bundle and conveying the book bundle from the aligning station to the cutting station, wherein the chuck mechanism further comprises a fixed block for supporting a bottom surface of the book bundle, and the chuck mechanism further comprises a movable block movable between a waiting position and a working position, the working position for holding the book bundle between the fixed block and the movable block.

39. (withdrawn) The trimmer of claim 38 wherein the movable block is movable along a threaded shaft to hold and release the book bundle, and is movable to and from the alignment station and the cutting station by way of a ball screw arrangement controlled by the central processing unit, and the cutting station comprises a plurality of knives comprising a top edge cutting knife for cutting the a top edge of the book bundle, a fore edge cutting knife for cutting the fore edge of the book bundle, and a bottom edge cutting knife for cutting a bottom edge of the book bundle.

40. (withdrawn) The trimmer of claim 39 wherein the cutting station further comprises a pressing plate and a driving mechanism in electronic communication with the central processing unit, the driving mechanism for driving the pressing plate between working and non-working positions, wherein at the working position, the pressing plate for pressing the book bundle to a cutting table, the cutting table for supporting the book bundle, and the book bundle is held between the pressing plate and the cutting table, and the top edge cutting knife the

fore edge cutting knife, and the bottom edge cutting knife are movable towards the book bundle held between the pressing plate and the cutting table and in doing so trim the book bundle.

41. (withdrawn) A method for trimming a book bundle comprising the steps of:

- providing a central processing unit for providing computerized control,

- providing a receiving station comprising an air evacuation apparatus comprising a first cylinder for driving air out of a book bundle;

- providing a conveying apparatus for conveying the book bundle from the receiving station to an alignment station;

- aligning the book bundle is at the alignment station, the alignment station comprising a chuck mechanism for clamping the book bundle, the chuck mechanism comprising a fixed block and a movable block, the book bundle clampable between the fixed block and the movable block;

- providing a cutting station for receiving the book bundle clamped between the fixed block and the movable block; and

- providing the movable block with a plurality of blades for trimming the book bundle.

42. (withdrawn) A method according to claim 41 further comprising the further acts of providing the conveying apparatus with a second cylinder movable along a rail, the second cylinder for holding the bundle of books, and moving the second air cylinder moves along the rail.

43. (withdrawn) The method of claim 42 further comprising the act of providing a rotatable ball screw in communication with

the second air cylinder, the ball screw rotatable for causing the movement of the second air cylinder along the rail.

44. (withdrawn) The trimmer according to claim 43 further comprising a third cylinder connected to the second cylinder by a connecting member, and wherein the third cylinder is in communication with a conveying claw, the conveying claw movable into and out of alignment with support plates that support the book bundle by way of controllable movement of the third cylinder.

45. (withdrawn) The trimmer of claim 44 wherein the conveying claw is movable between a projected position and a retracted position by the third cylinder, in the projected position the conveying claw is for pushing a preceding booklet bundle towards an alignment station.

46. (withdrawn) The trimmer of claim 45 wherein the alignment station further comprises a top edge aligning guide, a bottom edge aligning guide, a lever guide, and wherein the book bundle is alignable between the top edge aligning guide, bottom edge aligning guide, lever guide and the conveying claw.

47. (withdrawn) The method of trimming a book bundle according to claim 46 comprising the further steps of providing a chuck mechanism for holding the book bundle, and providing the chuck mechanism with a fixed block for supporting a bottom surface of the book bundle a movable block movable between a waiting position and a working position, the working position for pinching the book bundle between the fixed block and the movable

block, then conveying the book bundle from the aligning station to the cutting station.

48. (withdrawn) The method according to claim 47 comprising the further act of providing the cutting station with a top edge cutting knife for cutting the a top edge of the book bundle, a fore edge cutting knife for cutting the fore edge of the book bundle, and a bottom edge cutting knife for cutting a bottom edge of the book bundle.

49. (withdrawn) The method of trimming a book bundle according to claim 48 further comprising the acts of moving the book bundle to the cutting station and pressing the book bundle in the cutting station and trimming the book bundle the top edge, bottom edge, and fore edge cutting knives a cutting table, the cutting table for supporting the book bundle.

50. (withdrawn) An automated system for trimming a book bundle comprising:

- a means for computerized control for controlling the system and in electronic communication with:

- a receiving station for receiving a book bundle;

- a conveying apparatus for moving the book bundle from the receiving station to the alignment station;

- an alignment station for aligning the book bundle received from the conveying apparatus; and

- a cutting station for receiving the book bundle from the receiving station.

51. (withdrawn) The system of claim 50 wherein the receiving

station comprises a first cylinder connected to an air evacuation plate, the air evacuation plate for contacting and compressing the book bundle and driving out air, and the conveying apparatus comprising a second cylinder for holding the book bundle, the conveying apparatus also comprising a ball screw rotatably connected to second cylinder, and the conveyor apparatus further comprising a third cylinder connected to it by a connecting member, the third cylinder connected to a conveying claw, the conveying claw for pushing a preceding book bundle to the alignment station.

52. (withdrawn) The system of claim 50 wherein the means for computerized control measures the height of the book bundle after the air has been driven out of the book bundle and this is of the book bundle.

53. (withdrawn) The system of claim 52 wherein the alignment station comprises a fixed block and a movable block, and further comprises a motor and a threaded shaft connected to the movable block, and the means for computerized control adjusts the movable block for the height of the book bundle, so that the book bundle may enter the alignment station.

54. (withdrawn) The system of claim 51 wherein the cutting station further comprises a plurality of blades for cutting the book bundle, and the cutting station comprises an adjustable cutting station plate, and the means for computerized control instructs the adjustable cutting station plate so that the book bundle is receivable therein.